

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1 (currently amended): A method for a wireless receiver capable of handling signals of
5 different modes by a common ADC, comprising
receiving a transmitted radio frequency (RF) signal;
down-converting the transmitted RF signal into a baseband signal;
analog-to-digital converting the baseband signal into a primary digital signal with
a basic data rate by the common ADC (analog-to-digital converter);
10 processing the primary digital signal according to a first data rate not higher than
the basic data rate to detect whether the primary digital signal with the first
data rate carries information of a first predetermined mode; and
down-converting the primary digital signal into a second data rate lower than the
basic data rate and then processing the primary digital signal according to a
15 the second data rate lower than the basic data rate to down-convert the basic-
sample rate into the second data rate and to detect whether the primary digital
signal with the second data rate carries information of a second predetermined
mode.
- 20 2 (original): The method of claim 1, further comprising a step of:
temporarily stopping processing the primary digital signal according to the second
data rate when the information in the primary digital signal meets the first
predetermined mode.
- 25 3 (original): The method of claim 1, further comprising a step of:
temporarily stopping processing the primary digital signal according to the first
data rate when the information in the primary digital signal meets the second

predetermined mode.

4 (original): The method of claim 1, wherein the first data rate is the same as the basic data rate.

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5 (original): The method of claim 1, wherein the basic data rate is an integer multiple of the first data rate.

6 (original): The method of claim 1, wherein the first data rate is lower than the basic data rate and the step of processing the primary digital signal according to the first data rate comprises a step of down-converting the basic data rate into the first data rate.

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7 (currently amended): The method of claim 1, wherein the first predetermined mode is global system for mobile communications-1800 (GSM-1800) and the second predetermined mode is wideband code division multiple access (WCDMA).

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8 (currently amended): The method of claim 1, wherein the first predetermined mode is orthogonal frequency division multiplexing (OFDM) mode and the second predetermined mode is direct sequence spread-spectrum/complementary code keying (DSSS/CCK) mode.

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9 (currently amended): The method of claim 1, wherein the basic data rate is an integer multiple of the lower ~~between~~ of the first and second data rates.

10 (original): The method of claim 1, before the steps of processing the primary digital signal, comprising a step of filtering adjacent channel interference in the primary digital signal with a basic data rate.

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11 (original): A wireless receiver capable of handling signals of different modes, comprising:

- an antenna for receiving transmitted radio frequency (RF) signal;
- an RF module for down-converting the transmitted RF signal into a baseband
5 signal;
- a common ADC (analog-to-digital converter) for analog-to-digital converting the
baseband signal into a primary digital signal with a basic data rate;
- a first baseband processing module for processing the primary digital signal
according to a first data rate not higher than the basic data rate to detect
10 whether the primary digital signal with the first data rate carries information
meeting a first predetermined mode; and
- a second baseband processing module comprising:
 - a sample rate converter for down-converting the basic data rate into a
second data rate lower than the basic data rate; and
 - 15 a baseband processor for processing the primary digital signal with the
second data rate to detect whether the primary digital signal with the
second data rate carries information meeting a second predetermined
mode.

20 12 (original): The wireless receiver of claim 11, further comprising:

- a power control module for temporarily switching one of the first and second
baseband processing modules into a power saving mode when the other of the
first and second baseband processing modules detects that the primary digital
signal carries information meeting a corresponding predetermined mode.

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13 (original): The wireless receiver of claim 12, wherein the power control module is
capable of switching all of the baseband processing modules into a full power mode
when transmission procedures of a full-powered baseband processing module are

completed.

14 (original): The wireless receiver of claim 11, wherein the basic data rate is the same as the first data rate.

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15 (original): The wireless receiver of claim 11, wherein the basic data rate is an integer multiple of the first data rate.

16 (currently amended): The wireless receiver of claim 11, wherein the second data rate is lower than the first data rate and the first baseband processing module further comprises a sample rate converter for down-converting the basic ~~sample~~ data rate into the first data rate.

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17 (currently amended): The wireless receiver of claim 11, wherein the first predetermined mode is global system for mobile communications-1800 (GSM-1800) and the second predetermined mode is wideband code division multiple access (WCDMA).

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18 (currently amended): The wireless receiver of claim 11, wherein the first predetermined mode is orthogonal frequency division multiplexing (OFDM) mode and the second predetermined mode is direct sequence spread-spectrum/complementary code keying (DSSS/CCK) mode.

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19 (original): The wireless receiver of claim 11, wherein the sample rate converter is a Farrow interpolator or a Decimation Filter.

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20 (original): The wireless receiver of claim 19, wherein each baseband processing module comprises a Farrow interpolator for time recovery.